

Pages 81-90 Courtesy of MGA MELCO SALES INC.

## 5. ALIGNMENT PROCEDURES

### 5.1 Required Meter

10.7 MHz SWEEP GENERATOR  
FM SIGNAL GENERATOR  
AM SIGNAL GENERATOR  
OSCILLOSCOPE  
CIRCUIT TESTER  
ALIGNMENT DRIVER

### 5.2 Caution of Adjustment

- For turning the screw core of the oscillation transformer and intermediate frequency transformer, use of the driver made of bakelite stick is recommended for avoiding aberration due to adjusting.
- The output of the signal generator shall be kept within the lowest level sufficient to read the output indication.

### 5.3 Procedure of Adjustment

FM Section

Procedure	Circuit	Generator and Oscilloscope Coupling	Generator frequency	Dial Setting	Adjust	Remarks
1	IF circuit	Figs. 1, 2	10.7 MHz	Point of noninterference	T <sub>101</sub> T <sub>151</sub> T <sub>152</sub>	Center frequency be decided of ceramic filter. If the phase is delayed by a few at 10.7 MHz, adjust for the wave from large and summary. Adjust the height by VR <sub>151</sub> .
2					VR <sub>151</sub>	
3					Repeat procedures 1 - 2	
4	"	Figs. 1, 3	10.7 MHz	Point of noninterference	T <sub>153</sub>	Adjust T <sub>153</sub> to make the linear part of the S curve sharp and the wave from large.
5					Repeat procedures 4	
6	Oscillation circuit	Figs. 4, 5	87 MHz 109 MHz	Low freq. end stop High freq. end stop	VC <sub>103</sub>	Satisfy the receiving frequency range from 86.0 - 108.3 MHz.
7	RF circuit	Figs. 4, 5	98 MHz	Tuned to signal	VC <sub>101</sub> VC <sub>102</sub>	Adjust VC <sub>101</sub> , VC <sub>102</sub> and get the maximum voltage of the output.

Center frequency of ceramic filter

Color	Center frequency
Red	10.70 ± 0.03 MHz
Black	10.64 ± "
White	10.76 ± "
Orange	10.73 ± "
Blue	10.67 ± "

Procedures	Circuit	Signal generator connection	Signal generator frequency	Radio dial setting	Indicator connection	Adjust	Remarks
1	IF circuit	Fig. 6	262.5 KHz (400 Hz Mod.)	Point of non-interference near 1600 KHz	Fig. 7	T <sub>5</sub> , T <sub>4</sub>	Try to equalize the degree of diminution near $\pm 3$ KHz
2						T <sub>3</sub> , T <sub>2</sub>	
3						Repeat procedures 1 – 2	
4	Oscillation circuit and RF circuit	Fig. 8	1630 KHz	High freq end stop	"	VC <sub>3</sub>	Tune in
5			510 KHz	Low freq end stop	"	T <sub>1</sub>	Tune in
6					"	Repeat procedures 2 – 3	
7			1400 KHz	1400 KHz		VC <sub>2</sub> VC <sub>1</sub>	Adjust VC <sub>1</sub> , VC <sub>2</sub> and get the maximum voltage of the output
8			600 KHz	600 KHz	"	T <sub>1</sub>	Turn T <sub>1</sub> gradually and find the maximum sensitivity near 600 KHz
9			1400 KHz	1400 KHz	"	VC <sub>3</sub>	When the receiving frequency has changed because of adjusting 8, adjust VC <sub>3</sub> to correct
10					"	Repeat procedures 7 – 9	Check the range of the frequency of the received wave. This is the end of the adjustment.

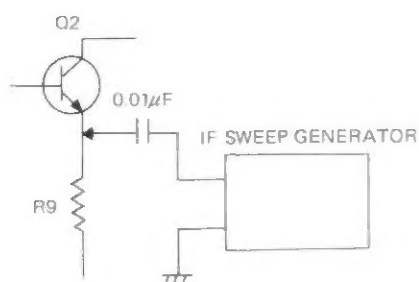


Fig. 6

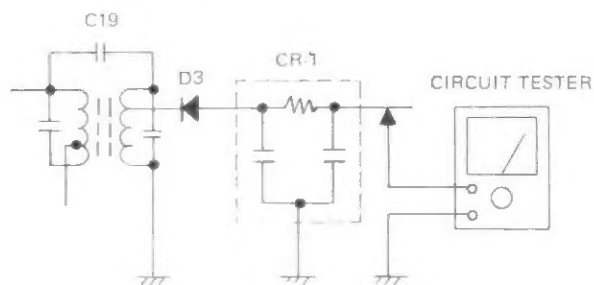


Fig. 7

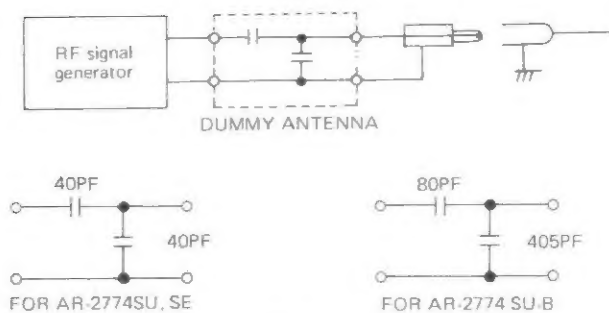
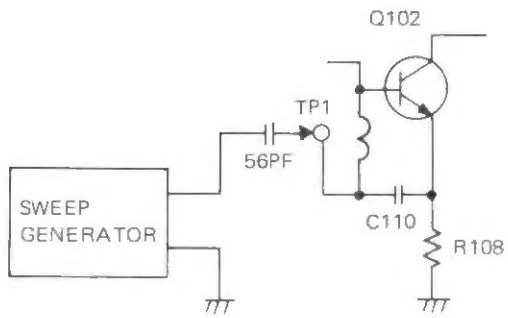
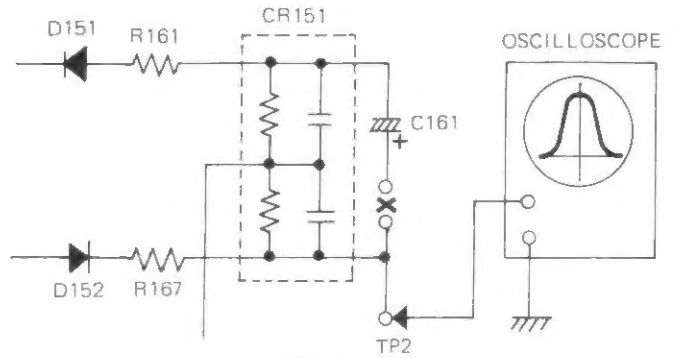


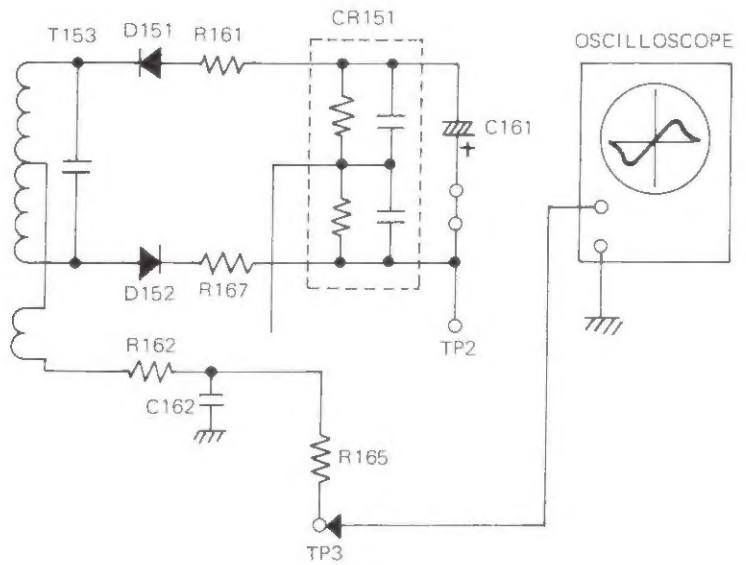
Fig. 8



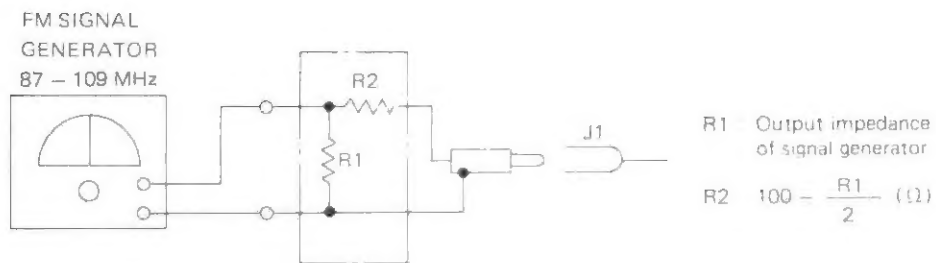
**Fig. 1**



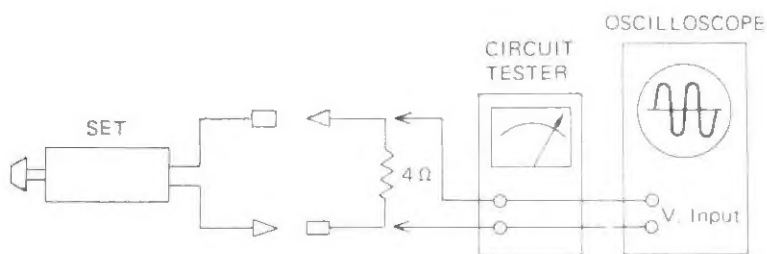
**Fig. 2**



**Fig. 3**



**Fig. 4**

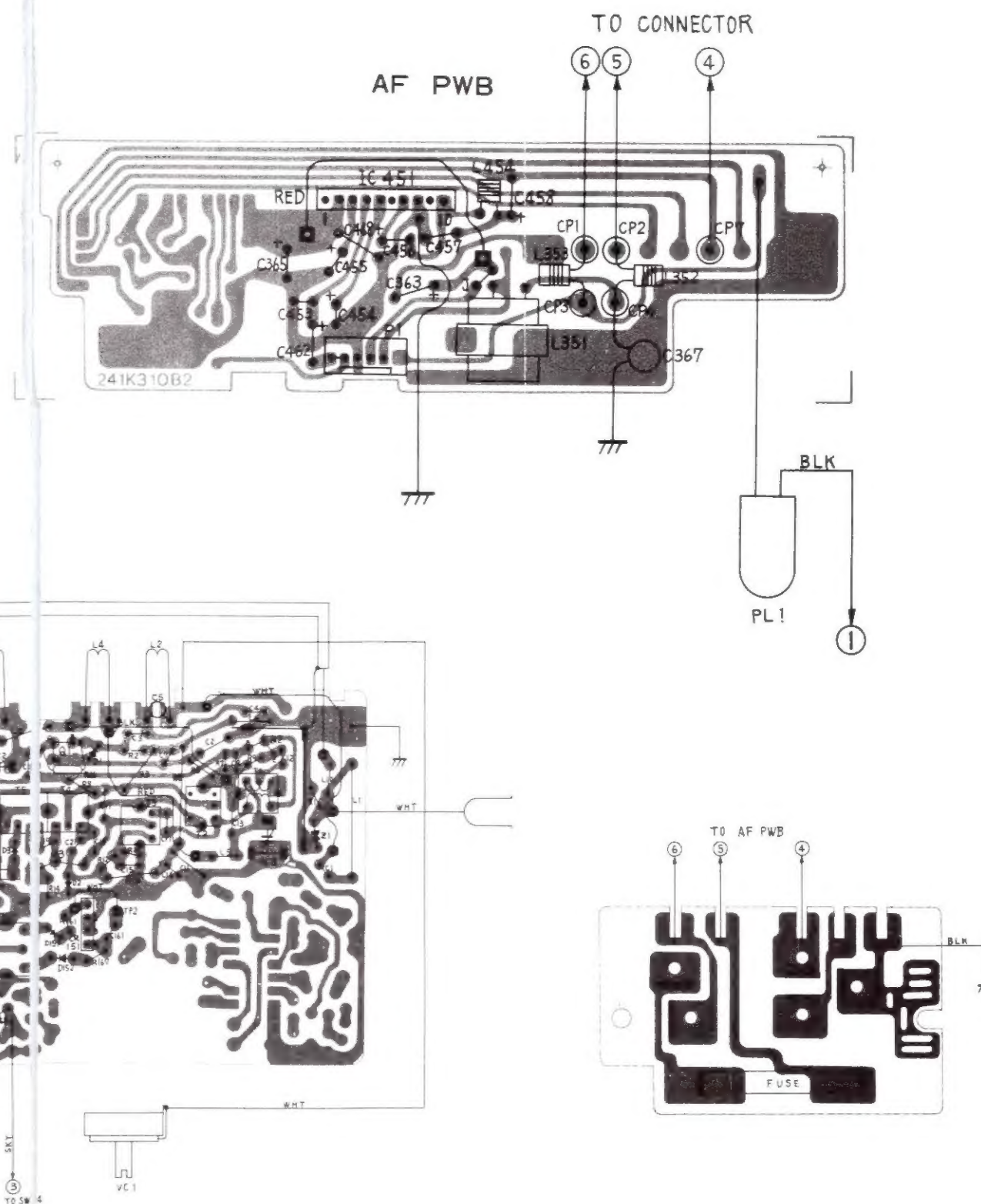
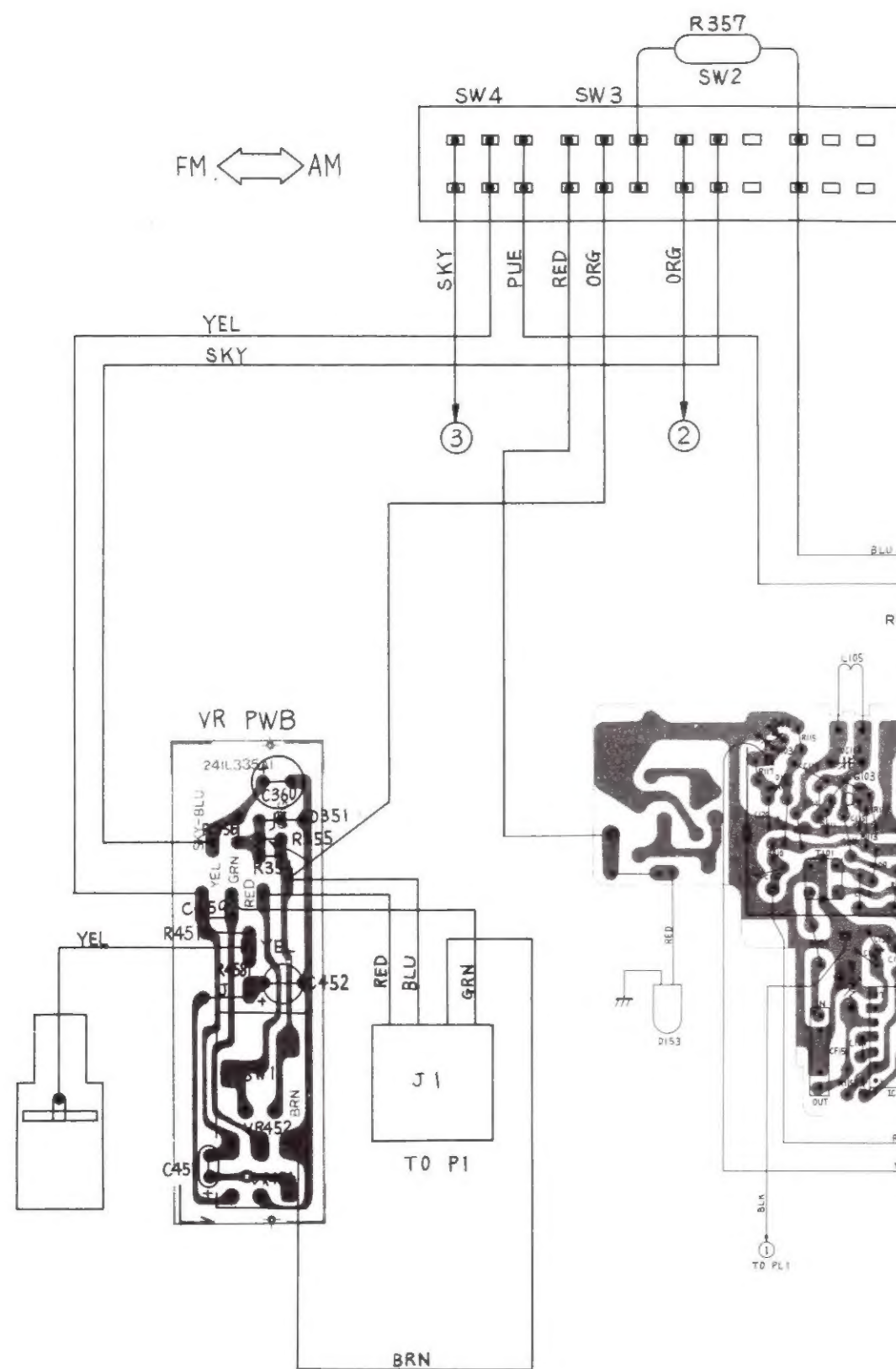


**Fig. 5**

# PARTS LIST

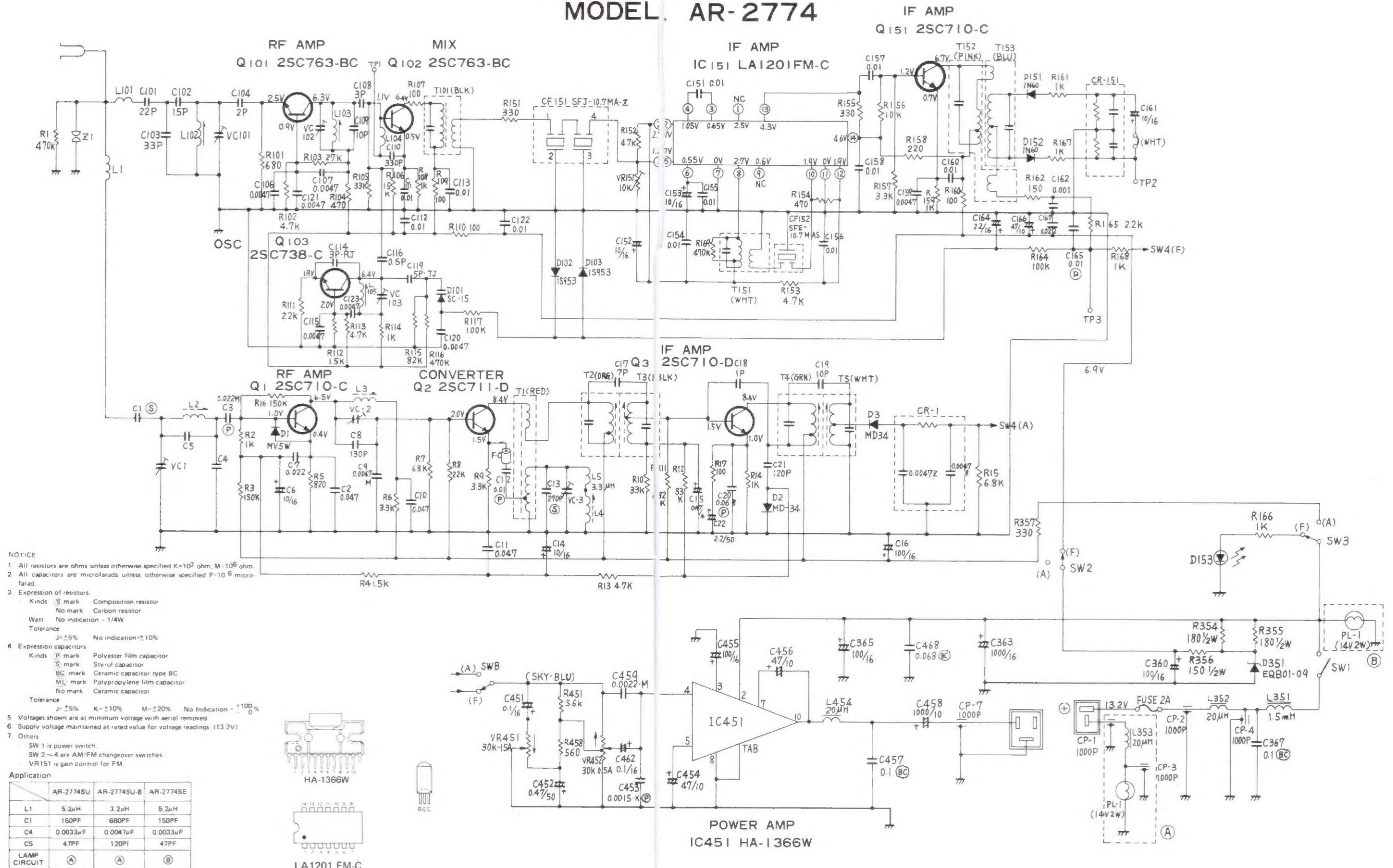
REF. No.	PART No.	DESCRIPTION	REF. No.	PART No.	DESCRIPTION
CAPACITORS AND RESISTORS			F, C	441M00101	Ferrite Core
VR 451,452 151	122 L06601	VR-Double Shaft		449 L02501	Socket ANT
	127M02201	VR-Semifixed		452 L01802	Connector-4P
	141 P02001	Ceramic Capacitor 1000PF		452 L02901	Connector
	141 P02003	" 1000PF		452 L02902	"
CR 151 1	149 L00101	CR-Multiple		560 K06502	Chassis
	149 L00201	"		590 K13701	Upper Cover
VC 101-103 2, 3 1	202 L00301	C-Trimmer		590 L55101	Shield case
	202 P10401	"		590M92201	Shield Frame
	202 P10605	"		590M92301	Shield Cover
SEMICONDUCTORS				591M01701	Shield Plate
Q 103 1, 151 3 2 101, 102	260 P05403	TR 2SC738-C		591M01801	Lamp Holder
	260 P17103	" 2SC710-C		591M01902	Bracket-TR
	260 P17105	" 2SC710-D		591M28901	Heat Sink
	260 P17503	" 2SC711-D		702 L03201	Panel
D2, 3 151, 152 101 351	260 P17605	" 2SC763-B, C		704M12501	Shaft Trimmer (SU, SUB)
	264 P00401	Diode MD34		704M14101	" (SE )
	264 P01306	" IN60P		707 L04007	Dial (SE )
	264 P07501	" SC-15		707M04607	" (SU, SUB)
102, 103 153 1	264 P10507	" EQB-01-09		768M04702	Back Plate
	264 P11701	" IS953		923 K17904	Assy PWB AF (SU, SUB)
	264 P14101	Diode LE SLP-214B		923 K17905	" (SE )
	265 P04301	Varistor MV-5W		923 K20103	Assy PWB RIF (SUB)
IC 151 451	266 P30402	IC LA1201 FM-C		923 K20104	" (SU, SE)
	266 P32401	" HA1366 W		923 L40102	Assy PWB VR
COILS AND TRANSFORMERS				241M09201	PWB LED
L 104 5 1 1 454 351 101	295 K03402	Tuner (AR-2774SU, SE)		943 L31808	Assy Panel (SU, SUB)
	295 K03403	" (AR-2774SU-B)		986 L01401	Assy Pointer
	320 D04601	Coil Trap		704 L03201	Knob-A (SU, SUB)
	351 D02102	Coil Choke		704 D91802	" (SE )
	351 L00101	" (SUB)		704 L03301	Knob-B (SU, SUB)
	351 L00103	" (SU, SE)		704M01902	" (SE )
	351 M00201	"		480 P61306	SP PO-1509F (SU, SUB)
	351 P00105	Trans Choke		480 P61306	" " (SE )
	361 M00101	Coil RF		480 P61304	" PO-1509D (SE )
	T 1 152 153 101 151 2 4 5 3	373 M00201		Trans OSC	281 K01503
374 C00401		Trans IF (PINK)		281 K01504	" (SE )
374 C00402		" (BLU)		242 L09803	Lead-A (SU )
374 L00201		" (BLK)		242 L09804	" (SUB)
374 L00202		" (WHT)		590 L50302	Bracket (SUB)
374 L00501		" (ORG)			
374 L00502		" (GRN)			
374 L00503		" (WHT)			
374 L00504		" (BLK)			
OTHERS					
Z 1 PL-1 CF151, 152	224 D01901	Air Gap			
	242 L15202	Lead Connector-4P			
	253 P01204	Pilot Lamp			
	296 M00301	Ceramic Filter			







# SCHEMATIC DIAGRAM MODEL AR-2774



Trouble	Circuit	Causes	Repair
Oscillatory case	AF circuit	<ul style="list-style-type: none"> <li>C455, C454, C456 open</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> </ul>
	Power source circuit	<ul style="list-style-type: none"> <li>C363, C365 open</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> </ul>
	RF and IF circuit	<div>AM</div> <ul style="list-style-type: none"> <li>C16 open</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> </ul>
Tuning difficulty	AFC circuit	<div>FM</div> <ul style="list-style-type: none"> <li>Diode D<sub>2</sub> open</li> <li>R115, R116 open</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> </ul>
	IF circuit	<div>AM</div> <ul style="list-style-type: none"> <li>U curve off</li> </ul>	<ul style="list-style-type: none"> <li>Readjust</li> </ul>

**6. GUIDE TO TROUBLE REPAIR**

Trouble	Circuit	Causes	Repair
No sound at all	Power source circuit	<ul style="list-style-type: none"> <li>Fuse open</li> <li>Coil L351 open</li> <li>Switch SW<sub>1</sub> on volume control damaged</li> <li>D351 short</li> <li>C365, C368, C363 short</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>Replace or soldering</li> <li>Replace</li> <li>"</li> <li>"</li> </ul>
	AF circuit	<ul style="list-style-type: none"> <li>Voice coil of speaker open</li> <li>CP7 short</li> <li>C462, C458 open</li> <li>IC451 open or short</li> <li>C454, C456, C455 capacity decreasing</li> <li>Volume control VR452 damaged</li> </ul>	<ul style="list-style-type: none"> <li>Replace or soldering</li> <li>Replace</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> </ul>
	RF, IF circuit and Detection circuit	<b>FM</b> <ul style="list-style-type: none"> <li>Transistor Q101, Q102, Q151 and IC151 open or short</li> <li>IFT, T101, T152, T153 open or short</li> <li>Coil, L101, L102, L103 open or short</li> <li>Bias resistance open</li> <li>R110, R151, R162, R165 open</li> <li>C101, C102, C104, C108, C157 open</li> <li>C161, CR151 short</li> <li>CF151, CF152 open</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> </ul>
		<b>AM</b> <ul style="list-style-type: none"> <li>Transistor Q1, Q2, Q3 open or short</li> <li>IFT, T1, T2, T3, T4, T5 open or short</li> <li>Coil, L1, L2, L3, L5 open</li> <li>C1, C3, C12 open</li> <li>Diode D3 open</li> <li>CR1 open or short</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> </ul>
Low sound and low sensitivity	AF circuit	<ul style="list-style-type: none"> <li>IC451 deteriorated</li> <li>Bias resistance varying</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>"</li> </ul>
	RF, IF circuit and detection circuit	<b>FM</b> <ul style="list-style-type: none"> <li>Q102, Q103 and IC151 deteriorated</li> <li>Diode D151, D152 deteriorated</li> <li>Radio frequency off</li> <li>U curve off</li> <li>Capacitor inserted in IFT open</li> <li>C111 capacity varying</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>"</li> <li>Readjust</li> <li>"</li> <li>Replace</li> <li>"</li> </ul>
		<b>AM</b> <ul style="list-style-type: none"> <li>Transistor Q1, Q2, Q3 weak</li> <li>Diode D2 weak</li> <li>Capacitor in IFT open</li> <li>C6, C7, C20 capacity varying</li> <li>Bias resistance varying</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>"</li> <li>"</li> <li>"</li> <li>"</li> </ul>
Distorted sound	AF circuit	<ul style="list-style-type: none"> <li>IC451 damaged</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> </ul>
	RF, IF circuit detection and AGC circuit	<b>FM</b> <ul style="list-style-type: none"> <li>Tuning improper</li> <li>S curve off</li> <li>U curve off</li> </ul>	<ul style="list-style-type: none"> <li>Recover tuning</li> <li>Readjust</li> <li>"</li> </ul>
		<b>AM</b> <ul style="list-style-type: none"> <li>Diode D2 weak</li> <li>R4, R13, resistance varying or open</li> </ul>	<ul style="list-style-type: none"> <li>Replace</li> <li>"</li> </ul>